

REMARKS

The Official Action mailed September 20, 2007, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on March 16, 2001; January 7, 2005; and March 23, 2006.

Claims 2-12 were pending in the present application prior to the above amendment. Claim 7 has been canceled without prejudice or disclaimer, and claims 2, 4, 6, 9 and 11 have been amended to better recite the features of the present invention. Accordingly, claims 2-6 and 8-12 are now pending in the present application, of which claims 2, 6 and 11 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 4 of the Official Action rejects claims 2, 3, 6, 8 and 11 as anticipated by U.S. Patent No. 6,081,228 to Leimer. The Applicant respectfully submits that an anticipation rejection cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP § 2131, to establish an anticipation rejection, each and every element as set forth in the claim must be described either expressly or inherently in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Independent claims 2, 6 and 11 have been amended to more clearly recite the following technical aspects of the present invention:

(i) The present invention is directed to a radio digital signal receiver for receiving a broadcast signal obtained by multiplexing a plurality of kinds of polyphase PSK-modulating signals having respective different numbers of phases.

(ii) The radio digital receiver operates in two reception modes, that is, a burst symbol reception mode and a continuation reception mode.

(iii) The burst symbol reception mode allows a carrier to be regenerated from only a polyphase PSK modulating signal having the minimum number of phases of the received plurality of kinds of polyphase PSK-modulating signals, and the continuation reception mode allows a carrier to be regenerated one by another from respective ones of the received plurality of kinds of polyphase PSK-modulating signals.

(iv) Inherent phase noise characteristics of a local oscillator in an outdoor unit are estimated.

(v) A carrier regenerative loop characteristic is selected and switching so that a critical CNR by a phase noise has either a rapid variation property or a gentle variation property, on the basis of the quality of the estimated inherent phase noise characteristics.

(vi) After selecting and switching the carrier regenerative loop characteristic, the operation of the receiver is shifted from the burst symbol reception mode to the continuation reception mode.

For the reasons provided below, the Applicant respectfully submits that Leimer does not teach the above-referenced features of the present invention, either explicitly or inherently.

The present invention's receiver receives a broadcast signal obtained by multiplexing a plurality of kinds of polyphase PSK-modulating signals (e.g., a BPSK-modulating signal, a QPSK-modulating signal and 8PSK-modulating signal), and the carrier regenerative loop characteristic is set at either a critical CNR by a phase noise (e.g., a graph as shown in Figure 5) having a rapid variation property or a critical CNR by a phase noise (e.g., a graph c shown in Figure 5) having a gentle variation property. Here, it is to be noted that the critical CNR by a phase noise is a peculiar physical measure, which is defined at page 6, lines 1-4 in the specification as follows: "[n]ote that what is meant by the critical CNR as shown in Figure 5 and Figure 6 is the critical value where the error rate after a trellis code is decoded is 2×10^{-4} and which, after the Reed-Solomon is decoded, becomes error-free."

Leimer does not teach, either explicitly or inherently, receiving a signal obtained by multiplexing a plurality of kinds of polyphase PSK-modulating signals (such as a BPSK-modulating signal, a QPSK-modulating signal and a 8PSK-modulating signal) and using the critical CNR by a phase noise. Indeed, in Leimer, several graphs for phase noise intensity, RMS phase error and C/N_0 are shown in Figures 2 to 7. However, none of these graphs is relevant to a critical CNR by a phase as in the present invention.

Therefore, the Applicant respectfully submits that Leimer does not teach the above-referenced features (i) through (vi) of the amended independent claims, either explicitly or inherently.

Since Leimer does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 are in order and respectfully requested.

Paragraph 5 of the Official Action rejects dependent claims 4, 5, 7, 9, 10 and 12 as obvious based on the combination of Leimer and U.S. Patent No. 5,572,516 to Miya. The Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application, as amended.


As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some reason to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the

combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Please incorporate the arguments above with respect to the deficiencies in Leimer. Miya does not cure the deficiencies in Leimer. The Official Action relies on Miya to allegedly teach the features of the dependent claims. Specifically, the Official Action relies on Miya to allegedly teach that “it is well known to transmit PSK modulated signals in GPS systems” (page 5, Paper No. 20070917). However, Leimer and Miya, either alone or in combination, do not teach or suggest the above-referenced features (i) through (vi) or that Leimer should be modified to include any of the above-referenced features (i) through (vi). Since Leimer and Miya do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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